US-PAT-NO: 5315694

DOCUMENT-IDENTIFIER: US 5315694 A

TITLE: High-speed color saturation converter for digital color data

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INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kasano; Akira	Kokubunji	N/A	N/A	JP

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FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	63-216830	August 31, 1988

US-CL-CURRENT: 345/591

ABSTRACT:

A high-speed saturation converter for a color image, comprising first R, G, and B image memories for storing digital color image data separated into R, G, and B, matrix coefficient calculating CPU for calculating two types of matrix coefficients .alpha. and .beta. defined by the following equation based on

given saturation conversion coefficient a:

.alpha.=1+2a, .beta.=1-a;

a processor for calculating R, G, and B components r*, g*, and b* of an identical pixel when saturation conversion S*=aS is performed with respect to vector S, in an RGB color space, of saturation components corresponding to R, G, and B components of the identical pixel in the first R, G, and B image memories, in accordance with the following matrix equation defined when an intensity before and after the conversion is constant: ##EQU1## and second R, G, and B image memories for storing the R, G, and B components r*, g*, and b* calculated by the processor means in a position of the corresponding pixel.

11 Claims, 9 Drawing figures

Exemplary Claim Number: 1

Number of Drawing Sheets: 6

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Claims Text - CLTX (20):

means responsive to variable **parameters** K and .theta., for converting the r, g, and b data into r*, g*, and b* data using a conversion **matrix, such that a hue** of the r*, g*, and b* data can be changed independently of an intensity of the r*, g* and b* data according to said **parameter .theta., said conversion**

matrix being defined in the following relation:
##EQU12## where the **parameters**
K and .theta. define the intensity and hue of the
r*, g*, and b*,
respectively.